******THIS IA A NEW IM. – PLEASE READ CAREFULLY.******

REPAIR OF DAMAGED HOT DIP GALVANIZED COATINGS

Repair of damaged hot dip galvanized coatings as a result of welding or cutting (flame) or excessively rough handling during shipment or erection can be accomplished by allowing the use of one of the following three types of material that possess the required properties.

A. ZINC-BASES SOLDER (Low-melting Point Zinc Alloy Repair Rods)

The most common types of this solder are:

1. Zinc Cadmium – Liquid temperature - 518°F-527°F (270°C-275°C)
2. Zinc-tin Lead – Liquid temperature - 446°F-500°F (230°C-260°C)
3. Zinc-tin Copper Alloys – Liquid temperature - 660°F-670°F (349°C-354°C)

Zinc-tin copper alloys must be applied while in a semi-solid state in the preferred application temperature range from 480°F-570°F (250°C-300°C).

Repair Procedures Using Zinc-Based Solder (Alloy)

1. Surfaces must be cleaned using a wire brush, a light grinding action or a mild blasting. To ensure a smooth reconditioned coating can be affected, surface preparation shall extend into the surrounding, undamaged galvanized coating.

2. If the area to be repaired includes welds, all weld flux residue and weld spatter shall be removed by wire brush, chipping, grinding or power scaling.

3. Areas to be repaired shall be preheated to at least 600°F (315°C). **NOTE:** Do not heat the surface over 750°F (400°C) or allow the surrounding galvanized coating to be burned. Wire-brush (again) the surface to be reconditioned during preheating and pre-flux if needed.

4. Rub the cleaned, preheated welds/areas with the repair stick to deposit an evenly distributed layer of zinc alloy.

5. Thickness shall be as originally specified.

B. PAINTS CONTAINING ZINC DUST

These types of paints contain zinc dust and are suitable for repairing damaged galvanized coatings provided the dried film contains not less than 65% zinc dust by weight.

Repair Procedures Using Paint Containing Zinc Dust

1. Surfaces to be repaired with paint containing zinc dust shall be clean, dry, free of oil, grease, pre-existing paint and corrosion by-products.

2. Surfaces to be repaired shall be blast-cleaned to the requirements of SSPC SP10 (near-white). Where circumstances do not allow blast or power tool cleaning to be used, then hand tools may be used. Cleaning shall meet the requirements of SSPC SP2 (removal of loose rust, mil scale, or paint to the degree specified, by hand chipping, crapping, sanding and wire-brushing). **NOTE:** To ensure that a smooth reconditioned coating can be affected, surface preparation shall extend into the undamaged galvanized coating.

3. If the areas/surfaces to be repaired include welds, first remove all weld flux residue and weld spatter by blasting, chipping, grinding or power scaling, etc.

4. Spray or brush-apply the paints containing zinc dust to the prepared surfaces/areas. Apply the paint in accordance with the manufacturer's recommendations in a single application employing multiple passes to achieve a dry film thickness as specified. Allow adequate curing time before shipping or subjecting the repaired items to service. The cure shall be in accordance with the paint manufacturer's recommendations.

5. Thickness shall be as originally specified.

C. SPRAYED ZINC (METALLIZING)

This method is not for field application and cannot be used in the field. This method involves the application of a zinc coating by spraying the surface to be repaired with droplets of molten metal using wire, ribbon, or powder processes.

Repair Procedures Using Sprayed Zinc (Metallizing)

1. Surfaces to be repaired shall be clean, free of soil, grease, and corrosion products, and dry.

2. If areas/surfaces to be repaired include welds, first remove all flux residues and weld spatter of a size or type that cannot be removed by blast cleaning by mechanical means, that is chipping, grinding or power scaling.

3. Blast clean the surface to be reconditioned in accordance with the requirements of SSPC SP5 (white metal).

4. To assure that a smooth reconditioned coating can be affected, surface preparation shall extend into the surrounding, undamaged galvanized coating.

5. Apply the coating to the spraying pistols fed with either zinc wire or zinc powder. Apply the sprayed coating as soon as possible after surface preparation and before visible deterioration of the surface has occurred.

6. The surface of the sprayed coating shall be of a uniform texture, free of lumps, coarse areas and loosely adherent particles.

7. The nominal thickness of the sprayed zinc coating shall be as originally specified.